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**UNITED STATES DISTRICT COURT**  
**CENTRAL DISTRICT OF CALIFORNIA**

ENTROPIC COMMUNICATIONS, LLC,  
 Plaintiff,  
 v.  
 DISH NETWORK CORPORATION,  
*et al.*,  
 Defendants.

Case No.: 2:23-cv-01043-JWH-KES  
 (Lead Case)  
 Case No.: 2:23-cv-01047-JWH-KES  
 (Related Case)  
 Case No.: 2:23-cv-01048-JWH-KES  
 (Related Case)  
 Case No.: 2:23-cv-05253-JWH-KES  
 (Member Case)

**ENTROPIC'S OPPOSITION TO  
 DIRECTV'S MOTION TO DISMISS**

ENTROPIC COMMUNICATIONS, LLC,  
 Plaintiff,  
 v.  
 COX COMMUNICATIONS, INC.,  
*et al.*,  
 Defendants.

Date: January 16, 2023  
 Time: 10:00AM  
 Courtroom: 9D (Santa Ana)

1 ENTROPIC COMMUNICATIONS, LLC,

2 Plaintiff,

3 v.

4 COMCAST CORPORATION, *et al.*,

5 Defendants.

6  
7  
8 ENTROPIC COMMUNICATIONS, LLC,

9 Plaintiff,

10 v.

11 DIRECTV, LLC, *et al.*,

12 Defendants.

## **TABLE OF CONTENTS**

1		
2	TABLE OF AUTHORITIES.....	5
3	I. INTRODUCTION.....	8
4	II. BACKGROUND.....	9
5	III. LEGAL STANDARD.....	10
6	IV. THE '518 PATENT RECITES A PATENTABLE IMPROVEMENT	
7	IN COAXIAL CABLE NETWORKS (COUNT I) .....	11
8		
9	a. The '518 Patent is directed to a technological solution to	
10	problems with signal transmission in coaxial cable networks,	
11	not to an abstract idea.....	11
12	b. The '518 Patent recites unconventional activity in coaxial	
13	networks. ....	16
14	V. THE '759 PATENT RECITES A PATENTABLE IMPROVEMENT	
15	IN COAXIAL NETWORK TECHNOLOGY (COUNT III).....	18
16	a. The '759 Patent is directed to a technological solution to	
17	problems with broadcasting over coaxial cable installations,	
18	not to an abstract idea.....	19
19	b. The '759 Patent recites unconventional activity in coaxial	
20	networks. ....	22
21	VI. THE '539 PATENT RECITES A PATENTABLE IMPROVEMENT	
22	IN COAXIAL NETWORK TECHNOLOGY (COUNT VII).....	25
23	a. The '539 Patent is directed to an improvement in modem	
24	functionality for communication over a coaxial network, not to	
25	an abstract idea.....	25
26	b. The '539 Patent recites unconventional activity in coaxial	
27	networks. ....	27
28	VII. THE '802 PATENT RECITES A PATENT-ELIGIBLE	
	IMPROVEMENT IN COAXIAL CABLE NETWORKS (COUNT	
	IV).....	30

1	a.	The '802 Patent claims a patentable improvement to	
2		constructing data packets used to enable communication in a	
3		coaxial cable network.....	30
4	b.	The '802 Patent recites unconventional activity in coaxial	
5		networks. ....	33
6	VIII.	THE '681 PATENT CLAIMS A PATENT-ELIGIBLE	
7		IMPROVEMENT TO NETWORK EFFICIENCY (COUNT XII).....	35
8	a.	The '681 Patent claims a patentable improvement to packet	
9		transmission in a broadband coaxial network.....	36
10	b.	The '681 Patent recites unconventional clock synchronization	
11		steps.....	40
12	IX.	JOINDER IN THE COX MOTION IS INAPPROPRIATE.....	42

## TABLE OF AUTHORITIES

### **Cases**

<i>Aatrix Software, Inc. v. Green Shades Software, Inc.</i> , 882 F.3d 1121 (Fed. Cir. 2018).....	11
<i>Adasa Inc. v. Avery Dennison Corp.</i> , 55 F.4th 900 (Fed. Cir. 2022).....	10
<i>Alice Corp. Pty. Ltd. vs. CLS Bank Int’l</i> , 573 U.S. 208 (2014).....	passim
<i>Bascom Glob. Internet Servs., Inc. v. AT&amp;T Mobility LLC</i> , 827 F.3d 1341 (Fed. Cir. 2016).....	24
<i>Bridge &amp; Post, Inc. v. Verizon Comm’cns, Inc.</i> , 778 F. App’x 882 (Fed. Cir. 2019.) .....	32
<i>Cellspin Soft, Inc. v. Fitbit, Inc.</i> , 927 F.3d 1306 (Fed. Cir. 2019).....	30
<i>Chamberlain Grp., Inc. v. Techtronic Indus. Co.</i> , 935 F.3d 1341 (Fed. Cir. 2019).....	32
<i>Coop. Ent., Inc. v. Kollektive Tech., Inc.</i> , 50 F.4th 127 (Fed. Cir. 2022).....	passim
<i>CosmoKey Sols. GmbH &amp; Co. KG. v. Duo Sec. LLC</i> , 15 F.4th 1091 (Fed. Cir. 2021).....	23, 35, 42
<i>Data Engine Techs. LLC v. Google LLC</i> , 906 F.3d 999 (Fed. Cir. 2018).....	22, 27
<i>Elec. Power Grp., LLC v. Alstom S.A.</i> , 830 F.3d 1350 (Fed. Cir. 2016).....	21, 22, 27
<i>Enfish, LLC v. Microsoft Corp.</i> , 822 F.3d 1327 (Fed. Cir. 2016).....	11
<i>Entropic Commcn’s, LLC v. DISH Network Corp.</i> , No. 2:23-cv-1043-JWH-KES, Dkt. 103 (C.D. Cal. Sept. 6, 2023).....	15, 23, 42
<i>Fortinet, Inc. v. Forescout Techs., Inc.</i> , 2020 WL 6415321 (N.D. Cal. Nov. 2, 2020) .....	40

1	<i>Illumina, Inc. v. Ariosa Diagnostics, Inc.</i> ,	
2	967 F.3d 1319 (Fed. Cir. 2020).....	11
3	<i>Implicit, LLC v. Ziff Davis, Inc.</i> ,	
4	2023 WL 4366351 (C.D. Cal. July 3, 2023).....	39
5	<i>Koninklijke KPN N.V. v. Gemalto M2M GmbH</i> ,	
6	942 F.3d 1143 (Fed. Cir. 2019).....	26, 27
7	<i>McRO, Inc. v. Bandai Namco Games Am. Inc.</i> ,	
8	837 F.3d 1299 (Fed. Cir. 2016).....	10, 14, 39
9	<i>Mentone Sols. LLC v. Digi Int’l Inc.</i> ,	
10	2021 WL 5291802 (Fed. Cir. Nov. 15, 2021).....	13, 19, 20, 25
11	<i>OIP Techs., Inc. v. Amazon.com, Inc.</i> ,	
12	788 F.3d 1359 (Fed. Cir. 2015).....	27
13	<i>Packet Intel. LLC v. NetScout Sys., Inc.</i> ,	
14	965 F.3d 1299 (Fed. Cir. 2020).....	passim
15	<i>Realtime Data LLC v. Array Networks Inc.</i> ,	
16	2023 WL 4924814 (Fed. Cir. Aug. 2, 2023).....	16
17	<i>SAP Am., Inc. v. InvestPic, LLC</i> ,	
18	898 F.3d 1161 (Fed. Cir. 2018).....	39
19	<i>Tatung Co., Ltd. v. Shu Tze Hsu</i> ,	
20	217 F. Supp. 3d 1138 (C.D. Cal. 2016) .....	42
21	<i>TecSec, Inc. v. Adobe Inc.</i> ,	
22	978 F.3d 1278 (Fed. Cir. 2020).....	14, 20, 21, 24
23	<i>Trinity Info Media, LLC v. Covalent, Inc.</i> ,	
24	562 F. Supp. 3d 770 (C.D. Cal. 2021) .....	21, 22
25	<i>Two-Way Media Ltd. v. Comcast Cable Commc’ns, LLC</i> ,	
26	874 F.3d 1329 (Fed. Cir. 2017).....	15, 33
27	<i>Uniloc USA, Inc. v. LG Elecs. USA, Inc.</i> ,	
28	957 F.3d 1303 (Fed. Cir. 2020).....	passim
	<i>Usher v. City of Los Angeles</i> ,	
	828 F.2d 556 (9th Cir. 1987).....	11, 33, 38

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**Statutes & Codes**

35 U.S.C. § 101.....8, 11, 36

## MEMORANDUM OF POINTS AND AUTHORITIES

### **I. INTRODUCTION**

The patents-in-suit are directed to *specific* technological solutions to *specific* technological problems related to data transmission over coaxial cable installations. These patents claim improvements in the functionality of coaxial cable installations, and they implement these improvements with activity that was both unconventional and contrary to the conventional wisdom in the art. Thus, the patents-in-suit recite patent-eligible subject matter under 35 U.S.C. § 101.

Prior to the patents-in-suit, coaxial cable installations were designed to allow communications between an external source of programming, such as a “head-end,” and user devices in homes or other buildings. (Dkt. 168, Entropic First Am. Compl. (“FAC”), ¶¶ 12, 21.) But this technology was not configured for—and in many ways prevented—communication between user devices in a home or building. (*Id.*, ¶¶ 23–32.) As a result, devices such as cable boxes could not send data (e.g., recorded video) to peer devices over existing coaxial cable installations. (*Id.*, ¶¶ 37–38.) Entropic’s<sup>1</sup> patents-in-suit overcame several technological barriers in coaxial installations and enabled the device-to-device communication that was not possible in the prior art.

DirecTV’s<sup>2</sup> Motion to Dismiss (“Motion”) challenges five of the patents-in-suit under 35 U.S.C. § 101. DirecTV’s Motion overgeneralizes the claims, rips the inventions out of their coaxial cable context, divorces them from the technical problems they were designed to solve, and ignores Entropic’s well-pleaded allegations regarding what was unconventional when the patents were invented. (Dkt. 160 (“Mot.”).) These errors are fatal. The technical environment of existing coaxial installations is central to the problems in the art, the solutions claimed in Entropic’s

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<sup>1</sup> “Entropic” refers to Plaintiff Entropic Communications, LLC.

<sup>2</sup> “DirecTV” refers to Defendants DirecTV, LLC and AT&T Services, Inc. collectively.



1 patents, and the reasons why those solutions are concrete, non-abstract, and  
 2 unconventional. DirecTV’s Motion should thus be denied as to all five patents.

## 3 **II. BACKGROUND**

4 The patents-in-suit are directed to improving the functionality of coaxial cable  
 5 installations. In such installations, cable wiring within a home or building typically  
 6 connected to an outside network via a single point of entry, allowing communication  
 7 with a cable “head end” or other source of data. (FAC, ¶¶ 12, 21.) Splitters were used  
 8 to allow the wiring within the building to branch out from the single point of entry to  
 9 multiple user devices. (*Id.*, ¶¶ 15–17.) The configuration of these installations was  
 10 optimized for transmission between the data source and the devices. (*Id.*, ¶¶ 21–22.)  
 11 But if one wanted instead to transmit data between user devices, this same  
 12 configuration posed several obstacles. First, the splitters intentionally isolated the  
 13 devices from one another to avoid interference. (*Id.*, ¶ 22.) Second, the number and  
 14 arrangement of splitters, along with the nature of the other network elements, created  
 15 differences in the communication pathways between any two devices. (*Id.*, ¶¶ 23,  
 16 29.) Third, the characteristics of the communication pathways between any two  
 17 devices differed depending on which direction the signals were transmitted due to  
 18 the properties of the splitters. (*Id.*, ¶¶ 30–31.) The “conventional wisdom” at the time  
 19 was that these problems prevented communication between devices in existing cable  
 20 installations. (*Id.*, ¶ 23; *see also* Dkt. 168-13 (“’539 Pat.”), 3:54–61.)

21 Entropic’s predecessor-in-interest to the patents-in-suit, Entropic  
 22 Communications, Inc. (“Entropic Inc.”), set out to solve these problems. (FAC, ¶¶  
 23 39–40.) Entropic Inc. developed technical solutions that are embodied in the claims  
 24 of the patents-in-suit. (*Id.*, ¶¶ 41–44.) Entropic Inc. also developed a new standard to  
 25 implement its inventions, known as the “Multimedia over Cable Alliance”  
 26 (“MoCA”). (*Id.*, ¶¶ 50–53.) Four of the five challenged patents arise from Entropic  
 27 Inc.’s work in the early 2000s: U.S. Patent Nos. 7,295,518 (the “’518 Patent”);  
 28 7,889,759 (the “’759 Patent”); 8,621,539 (the “’539 Patent”); and 8,085,802 (the

1 “‘802 Patent”). The fifth patent, U.S. Patent No. 8,363,681 (the “‘681 Patent”),  
2 improves upon this work. The technological problems solved by each patent are  
3 described in more detail in Sections IV–VIII below.

### 4 **III. LEGAL STANDARD**

5 The patent-eligibility test is a two-step analysis under the Supreme Court’s  
6 decision in *Alice Corporation Pty. Ltd. vs. CLS Bank International*, 573 U.S. 208  
7 (2014). At step one, the court analyzes the basic character of the invention to  
8 determine whether it is directed to patentable subject matter. “In [this] eligibility  
9 analysis, we consider the claim as a whole . . . and read it in light of the specification.”  
10 *Packet Intel. LLC v. NetScout Sys., Inc.*, 965 F.3d 1299, 1309 (Fed. Cir. 2020)  
11 (internal citations omitted). When analyzing claims in light of the specification,  
12 “courts ‘must be careful to avoid oversimplifying the claims’ by looking at them  
13 generally and failing to account for the specific requirements of the claims.”  
14 *See McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1313 (Fed. Cir.  
15 2016) (citation omitted). “If the focus of the claim is a specific and concrete  
16 technological advance, for example an improvement to a technological process or in  
17 the underlying operation of a machine, our inquiry ends and the claim is eligible.”  
18 *Adasa Inc. v. Avery Dennison Corp.*, 55 F.4th 900, 908 (Fed. Cir. 2022); *see also*  
19 *Uniloc USA, Inc. v. LG Elecs. USA, Inc.*, 957 F.3d 1303, 1307 (Fed. Cir. 2020).

20 If and only if the court determines that a patent is directed to ineligible subject  
21 matter does it proceed to step two of the *Alice* test. At step two, the court determines  
22 “whether the claim elements, individually and as an ordered combination, contain an  
23 inventive concept, which is more than merely implementing an abstract idea using  
24 well-understood, routine, [and] conventional activities previously known to the  
25 industry.” *Coop. Ent., Inc. v. Kollektive Tech., Inc.*, 50 F.4th 127, 130 (Fed. Cir. 2022)  
26 (alteration in original) (quotations and citations omitted). The Federal Circuit has  
27 held that claims contain an inventive concept when they recite functionality that is  
28 “different from and improves upon the prior art.” *Id.* at 132. “Whether the claim

elements or the claimed combination are well-understood, routine, [or] conventional is a question of fact.” *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1128 (Fed. Cir. 2018).

As the moving party, DirecTV bears the burden to show that the patents-in-suit are invalid under 35 U.S.C. § 101. *Illumina, Inc. v. Ariosa Diagnostics, Inc.*, 967 F.3d 1319, 1328 (Fed. Cir. 2020). At the pleading stage, the court “must presume all factual allegations of the complaint to be true and draw all reasonable inferences in favor of the nonmoving party.” *Usher v. City of Los Angeles*, 828 F.2d 556, 561 (9th Cir. 1987). “Thus, patent eligibility may be resolved at the Rule 12 stage only if there are no plausible factual disputes after drawing all reasonable inferences from the intrinsic and Rule 12 record in favor of the non-movant.” *Kollecive*, 50 F.4th at 130.

#### **IV. THE ’518 PATENT RECITES A PATENTABLE IMPROVEMENT IN COAXIAL CABLE NETWORKS (COUNT I)**

The ’518 Patent is patent-eligible because it claims a specific improvement to, and recites functionality that was not routine or conventional in, coaxial networks.

##### **a. The ’518 Patent is directed to a technological solution to problems with signal transmission in coaxial cable networks, not to an abstract idea.**

The ’518 Patent claims a specific technological solution to a specific problem in communications over legacy coaxial cable installations. Claims that are directed to a specific technological solution to a technological problem are not directed to an abstract idea. *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1336 (Fed. Cir. 2016). The ’518 Patent thus claims patent-eligible subject matter at *Alice* step one.

As described in the ’518 Patent and in Entropic’s First Amended Complaint, major technological obstacles prevented user devices in a building from communicating with one another over legacy coaxial cable installations. (Dkt. 168-1 (“’518 Pat.”), 4:28–32; FAC, ¶¶ 22–32.) These problems arose from the structure of these installations, which typically used a series of splitters and a web of coaxial cables to connect multiple end devices to a single “entry point” between a building

1 and an external cable “plant” or other network. (*Id.*, ¶¶ 16–19, 23.) While this  
2 architecture allowed end devices to receive content from a service provider, it  
3 impeded communication between the end devices. (*Id.*, ¶¶ 22–23, 38.)

4 For example, existing installations included “splitters” that “split” a signal  
5 coming from the cable network into multiple outputs, such as TVs or modems in  
6 different rooms. These splitters were specifically designed *not* to allow  
7 communications between user devices that were connected to different “branches”  
8 or “taps” of the splitter. (’518 Pat., 2:35–46.) For instance, the splitters impeded, or  
9 attenuated, transmission of signals between their outputs. (FAC, ¶¶ 22–23.) The  
10 splitters also created variability in the characteristics of the communication paths  
11 between end devices. (*Id.*, ¶ 29.) And they created asymmetry in how signals moved  
12 through the network depending on which direction they were transmitted. (*Id.*, ¶¶ 30–  
13 31.) Both of these properties posed obstacles to device-to-device communications.

14 Further compounding the problem, user devices that might want to  
15 communicate over a legacy cable installation had no information regarding the  
16 characteristics of the communication pathway(s) theoretically available between  
17 them. (*Id.* ¶¶ 25–26.) This was a particular issue in cable installations because the  
18 paths between any two end devices were different due to differences in the length  
19 and composition of the cable and the number of splitters. (*Id.*, ¶ 29.) Also, any device-  
20 to-device communications needed to be strong enough to be received by the target  
21 without creating interference in the network. (See ’518 Pat., 3:21–24.) The inability  
22 of devices to communicate over a conventional cable installation was thus the result  
23 of numerous technological problems in such installations.

24 The ’518 Patent’s claims are directed to a technological solution to one such  
25 technological problem. Claim 1 uses a particular signal (a “probe message”) sent  
26 between devices using a particular technology (“multi-carrier signaling”) on a  
27 particular network (“cable wiring”) to measure “channel characteristics” of the path  
28 between devices. (’518 Pat., cl. 1.) The claim then uses “bit loading” to transmit

1 different amounts of information in different parts of the signal based on the results  
2 of the “probe message.” (*Id.*) Collectively, this allows end devices in a legacy cable  
3 installation—which previously could not communicate—to learn the properties of  
4 the previously-unknown path between them and identify a set of parameters that  
5 allows for effective communication. (’518 Pat., 4:37–47; FAC, ¶ 66.)

6 The Federal Circuit has repeatedly held patentable claims that, like those of  
7 the ’518 Patent, are directed to improvements to how networks operate. *See, e.g.,*  
8 *Packet Intel.*, 965 F.3d at 1309; *Mentone Sols. LLC v. Digi Int’l Inc.*, Nos. 2021-  
9 1202, 2021-1203, 2021 WL 5291802, at \*5–6 (Fed. Cir. Nov. 15, 2021). For instance,  
10 in *Packet Intel.*, the Federal Circuit held that claims directed to a “challenge unique  
11 to computer networks, identifying disjointed connection flows in a network  
12 environment,” were patent-eligible. 965 F.3d at 1309. Like the claim in *Packet Intel.*,  
13 claim 1 of the ’518 Patent is directed to a challenge unique to a type of computer  
14 network (coaxial cable installations): overcoming structural and interference  
15 problems that precluded communication between devices. (*See, e.g.,* ’518 Pat., 2:28–  
16 46.) Similarly, in *Mentone*, the Federal Circuit held claims patentable because they  
17 were directed to enhancing data transmission “by enabling the use of timeslots for  
18 transmission that were not previously available.” 2021 WL 5291802, at \*5. Similarly,  
19 claim 1 is directed to enabling the use of a resource—cable installations—“that [was]  
20 not previously available” for communication by claiming a way to overcome the  
21 “signal reflections and tap port isolation of splitters.” (’518 Pat., 4:19–32.)

22 In its Motion, DirecTV attempts to characterize claim 1 of the ’518 Patent as  
23 directed to “(i) transmitting and analyzing information, and (ii) determining a bit  
24 loading scheme.” (Mot. at 26.) This characterization is wrong for several reasons.

25 **First**, DirecTV’s characterization of claim 1 as solely directed to determining  
26 a bit loading scheme ignores key limitations that define the technical problem being  
27 solved. (*Id.*) Claim 1 requires a specific network where “at least two network  
28 devices” are connected to “splitter tap ports” through “coaxial cable.” (’518 Pat.,

1 cl. 1.) These limitations define a specific network environment with specific  
2 technological problems that the claimed invention solves. (FAC, ¶ 66); *see Uniloc*,  
3 957 F.3d at 1307 (claims directed to solving specific technological problem in  
4 communications systems were patent-eligible). Thus, that environment must be  
5 considered part of claim 1’s character as a whole. Indeed, the Federal Circuit has  
6 “previously cautioned” against “failing to account for the specific requirements of  
7 the claims.” *McRO*, 837 F.3d at 1313. Here, contrary to DirecTV’s argument, “[t]he  
8 focus of the claimed advance cannot ignore all but the [determination of a bit-loading  
9 scheme],” *TecSec, Inc. v. Adobe Inc.*, 978 F.3d 1278, 1295 (Fed. Cir. 2020). When  
10 properly viewed as a whole, claim 1 is directed to a specific technological solution  
11 to a specific technical problem, not an abstract idea.

12 **Second**, DirecTV is wrong that “[t]he ’518 Patent does not claim a system that  
13 alters how signals are transmitted in a coaxial cable communication network.”  
14 (Mot. at 25.) The ’518 Patent emphatically **does** alter how signals are transmitted on  
15 such cable installations. Legacy coaxial installations did not allow “signals [to be]  
16 transmitted” between user devices **at all**, much less with a specific bit loading pattern  
17 based on a probe of the network. (FAC, ¶¶ 22–23, 29–32; ’518 Pat., 4:19–33.)  
18 Similarly, DirecTV is wrong that the ’518 Patent “does not propose a new mechanism  
19 for applying bit loading to a network.” (Mot. at 25.) The factual allegations in  
20 Entropic’s First Amended Complaint—which must be taken as true—show that bit  
21 loading had never before been applied to communication between user devices on a  
22 coaxial network. (FAC, ¶¶ 75–78.) Thus, the ’518 Patent recites and teaches an  
23 invention that DirecTV implicitly concedes is patentable: altering how signals are  
24 transmitted in a coaxial cable installation.

25 **Third**, DirecTV ignores disclosures in the specification about the technical  
26 problems addressed by the ’518 Patent. “In [an] eligibility analysis, [the court]  
27 consider[s] the claim as a whole . . . and read[s] it in light of the specification.” *Packet*  
28 *Intel.*, 965 F.3d at 1309 (internal citations omitted). Here, the specification discusses



1 specific technical problems with prior art coaxial cable installations, such as high  
2 signal attenuation, and ties the claimed functions of probing and bit loading to a  
3 specific technical solution to these problems. (*See* '518 Pat., 2:28–34, 4:37–47.)  
4 DirecTV's oversimplified step one analysis ignores all of this, and thus fails to read  
5 claim 1 in view of the specification as the Federal Circuit requires.

6 **Fourth**, DirecTV disregards the factual allegations in Entropic's First  
7 Amended Complaint. These allegations explain the technical challenges that legacy  
8 coaxial installations posed to communication between user devices. (FAC, ¶¶ 22–  
9 32.) And they explain, based on these facts, that the claimed combination of probing  
10 and bit loading overcame these problems. (*Id.*, ¶ 66.) Although DirecTV cites this  
11 Court's Order in the *DISH* case, that Order related to different claims of different  
12 patents. (*DISH* Order at 1.) Further, the record here is different because of Entropic's  
13 well-plead allegations regarding the shortcomings of the art and how the '518 Patent  
14 addresses them. (FAC, ¶¶ 64–66.) These allegations must be credited at the pleading  
15 stage, *Kollecitive*, 50 F.4th at 133, and underscore that claim 1 is patent-eligible.

16 **Lastly**, DirecTV's cited cases are inapposite. (Mot. at 27.) In *Two-Way Media*,  
17 the patentee argued that its claims were directed to a "particular scalable network  
18 architecture" and thus patentable. *Two-Way Media Ltd. v. Comcast Cable Commc 'ns*,  
19 *LLC*, 874 F.3d 1329 at 1338 (Fed. Cir. 2017). The Federal Circuit rejected this  
20 argument because the claims were not "sufficiently tie[d]" to this architecture and  
21 instead recited generic functions that failed to "lead[] to an improvement in the  
22 **functioning** of the system." *Id.* at 1338 (emphasis added). By contrast, the channel  
23 probing and bit loading of claim 1 are tied directly to the specific architecture of  
24 "cable wiring comprising a splitter . . . and a plurality of segments of coaxial cable  
25 connecting between the splitter . . . and the network devices." ('518 Pat., cl. 1.)  
26 The specification also ties the claimed invention to "overcom[ing] the problem of  
27 multipath and high attenuation," thus improving the functioning of coaxial cable  
28 networks. (*Id.*, 4:37–47.)

1        *Realtime Data* is similarly irrelevant. There, “[n]either the claim nor the  
2 specification” of the patents at issue taught how the claimed functions were  
3 performed or how they improved upon the prior art. *Realtime Data LLC v. Array*  
4 *Networks Inc.*, Nos. 2021-2251, 2021-2291, 2023 WL 4924814, at \*8–9 (Fed. Cir.  
5 Aug. 2, 2023). By contrast, the ’518 Patent claims specific functions (channel  
6 probing and bit loading), and the specification teaches in detail how these functions  
7 are performed and how they improved upon the prior art by overcoming specific  
8 issues in coaxial installations (multipath interference and signal attenuation).  
9 (’518 Pat., 4:37–62, 8:9–11:6.) Claim 1 of the ’518 Patent is thus directed to patent-  
10 eligible subject matter under *Alice* step one.

11        **b. The ’518 Patent recites unconventional activity in coaxial networks.**

12        Even if claim 1 of the ’518 Patent were (incorrectly) characterized as directed  
13 to an abstract idea, it would still be patent-eligible because it recites an inventive  
14 combination of elements that were neither routine nor conventional in the art.

15        As described above, the ’518 Patent addresses specific technical problems in  
16 coaxial installations using a combination of probing and bit loading. (*See supra* at  
17 IV.a.) This combination of techniques was neither routine nor conventional. Probes  
18 had not previously been sent between devices in a home coaxial network in the prior  
19 art, and doing so was considered unconventional. (FAC, ¶¶ 77–78.) Likewise,  
20 selecting a bit loading scheme based on these probe results had not been used in  
21 coaxial networks in the prior art and was considered unconventional. (*Id.*, ¶ 79.)  
22 The use of these techniques thus provides an inventive concept.

23        The Federal Circuit’s decision in *Kolleeve* is on all fours here. 50 F.4th 127.  
24 In *Kolleeve*, the claims related to structuring peer-to-peer networks for content  
25 distribution. *Id.* at 129. The claim recited “a particular arrangement of peer nodes for  
26 distributing content . . . which did not exist in the prior art.” *Id.* at 133. This  
27 arrangement established a new type of network topology that allowed for exchange  
28 of data between peer nodes. *Id.* The specification then “explain[ed] how claim 1’s



1 dynamic P2P network structure is different from and improves upon the prior art.”  
2 *Id.* at 132. Accordingly, the Federal Circuit held that the claimed invention recited an  
3 inventive concept. *Id.* at 133.

4 Here, claim 1 is directed to a particular form of communication in a coaxial  
5 networking environment that did not exist in the prior art. Specifically, claim 1  
6 requires devices communicating through the tap ports of a splitter using channel  
7 probes and bit loading. This topology did not previously exist in coaxial networks,  
8 which were limited to communication with the cable head end. (*See* ’518 Pat., 4:19–  
9 33.) The specification also explains how the claimed channel probing and bit loading  
10 enabled a new form of communication. (*Id.*, 9:35–41 (probes use a predetermined  
11 data sequence “to estimate the channel characteristics”), 8:9–15 (bit loading uses  
12 different modulation schemes based on “signal to noise ratio”), 4:42–47 (bit loading  
13 used “to implement a network that overcomes the problem of multipath and high  
14 attenuation in building cable wiring”).) Claim 1, like the claims in *Kollecative*, recites  
15 an improvement to networking technology that “is different from and improves upon  
16 the prior art.” 50 F.4th at 132.

17 In response, DirecTV argues that individual components in claim 1—coaxial  
18 networks and splitters—were known. (Mot. at 28.) “This argument misses the point:  
19 useful improvements to [coaxial] networks are patentable regardless of whether the  
20 network is comprised of standard computing equipment,” *Kollecative*, 50 F.4th at 135.  
21 That the invention starts with existing equipment and adds new capabilities is  
22 precisely why it claims an advance: it improves the operation of cable networks  
23 without requiring any new hardware or re-wiring. *See Uniloc*, 957 F.3d at 1309.

24 Further, contrary to DirecTV’s argument, even in isolation, the claimed  
25 communication “between the splitter tap ports and the network devices” was *not*  
26 routine or conventional. (’518 Pat., cl.1; FAC, ¶¶ 76–78.) The prior art DirecTV cites  
27 proves Entropic’s point. That art relates only to communication between a head end  
28 (“network unit” or “central office”) and a single customer device (“network

1 termination” or “remote terminal”). (*See, e.g.*, Ex. 1<sup>3</sup>, U.S. Patent No. 6,438,174 at  
2 Fig. 1, 6:30–35; Ex. 2, U.S. Patent No. 6,259,746 at Fig. 1, 2:51–67.) The ’518 Patent  
3 explicitly distinguishes its invention from this art: “The prior art references address  
4 communicating between a cable head end and in-home units but do not address the  
5 impairments present in the home wiring that restricts high bandwidth communication  
6 between devices within the home.” (’518 Pat., 4:19–32.)

7 Even if DirecTV’s attacks on the unconventionality of claim 1’s individual  
8 limitations were true, they would not be sufficient. *Alice* step two requires analysis  
9 of the elements as an “ordered combination.” *Kolleeve*, 50 F.4th at 130. Here, claim  
10 1 of the ’518 Patent recites a combination of probing and bit loading functions within  
11 a coaxial installation in a building. This environment had never before used, and  
12 never before benefited from, these functions. (FAC, ¶¶ 76–78.) It is irrelevant that  
13 DirecTV argues that probing in the abstract was known, or that bit loading in the  
14 abstract was known, or that coaxial cable networks were known. *See Kolleeve*, 50  
15 F.4th at 135 (rejecting argument that claim lacked an inventive concept “because P2P  
16 networks and CDNs are conventional.”). The **combination** of technologies used in  
17 claim 1, which was neither routine nor conventional, supplies an inventive concept.  
18 Claim 1 is thus patent-eligible under step two of the *Alice* analysis.

19 **V. THE ’759 PATENT RECITES A PATENTABLE IMPROVEMENT IN**  
20 **COAXIAL NETWORK TECHNOLOGY (COUNT III)**

21 Claim 2 of the ’759 Patent (DirecTV’s representative claim) is directed to  
22 enabling broadcast communications in a coaxial cable network. The ’759 Patent  
23 claims a specific improvement to, and recites functionality that was not routine or  
24 conventional in such networks. Thus, the ’759 Patent is patentable.

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27 <sup>3</sup> All exhibits cited herein are annexed to the Declaration of Douglas Jordan Winnard  
28 filed concurrently herewith, unless otherwise noted.

1           **a. The '759 Patent is directed to a technological solution to problems with**  
2           **broadcasting over coaxial cable installations, not to an abstract idea.**

3           Like the '518 Patent, claim 2 of the '759 Patent claims a specific technological  
4 solution to a specific problem in communications over legacy coaxial cable  
5 installations and is thus patent-eligible.

6           The basic character of claim 2 of the '759 Patent is enabling broadcast  
7 communication in a specific environment (broadband cable networks) with variable  
8 and unknown pathways between multiple devices. As argued above in Section III  
9 and IV.a, the Federal Circuit has repeatedly held that improvements to how networks  
10 operate are patentable inventions. *See, e.g., Packet Intel.*, 965 F.3d at 1309; *Mentone*,  
11 2021 WL 5291802, at \*5–6. And like claim 1 of the '518 Patent, claim 2 of the '759  
12 Patent is another example of such a patentable improvement.

13           The '759 Patent is directed at a solution to another aspect of the technological  
14 problems discussed above in Section IV, applied to the scenario where one user  
15 device on a coaxial installation communicates with multiple other such devices. For  
16 instance, “users in a home may desire to play network video games between different  
17 rooms in home environment utilizing the coaxial cable network” and “may want to  
18 share other types of digital data (such [as] video and/or computer information)  
19 between different rooms in a home.” (Dkt. 168-5 (“’759 Pat.”), 3:14–21.) In addition  
20 to the challenges discussed in Section IV, this type of communication faced the  
21 additional obstacle of how to determine appropriate communication parameters, such  
22 as bit-loading, that worked on all of the different and unknown channels between the  
23 sender and the multiple recipients.

24           The '759 Patent claims a technological solution to this problem in which  
25 “probe signals” are sent to multiple recipients. The receiving nodes receive the probe,  
26 use it to measure a characteristic of the channel, and respond to the sender. These  
27 responses are used to “determining a common bit-loading modulation scheme for  
28 communicating between a plurality of nodes in a broadband cable network (‘BCN’).”

1 ('759 Pat., cl. 2.) The common bit-loading scheme is a particular communications  
2 parameter that defines how much data can be sent at a given time, and it allows a user  
3 device to send data to multiple recipients simultaneously by accounting for  
4 differences in channels between the sender and multiple recipients. (*Id.*, 6:52–7:4.)

5 The specification confirms that claim 2 is directed to a non-abstract technical  
6 improvement in cable networking. For instance, the specification provides several  
7 different examples of network configurations where, due to the placement and design  
8 of coaxial splitters, the channels between any two devices are “physically and  
9 electrically different.” (*Id.*, 7:5–18, 7:31–9:60, Figs. 6–8.) As the specification  
10 explains, the communication path from a first node (“Node A”) to a second node  
11 (“Node B”) has different properties than the path from Node A to a third node (“Node  
12 C”). (*Id.*, 7:31–9:60, Figs. 6–8.) Thus, a bit-loading scheme for one channel may not  
13 work for the other. The specification explains that a common bit-loaded scheme is  
14 determined by comparing carrier signal values of the two paths and “choosing the  
15 lowest corresponding modulation value for each carrier number.” (*Id.*, 10:41–57, Fig.  
16 11C.) The use of this scheme, as claimed, allows the transmitter to transmit  
17 information to “node B and node C simultaneously,” which was not previously  
18 possible. (*Id.*, 10:56–57.) Claim 2 is directed to a specific improvement to  
19 communication in cable installations and is thus patent-eligible. *See, e.g., Packet*  
20 *Intel.*, 965 F.3d at 1309; *Mentone*, 2021 WL 5291802, at \*5–6.

21 The patentability of Claim 2 is confirmed by its similarity to claims the Federal  
22 Circuit has held to be patent-eligible. In *TecSec*, for example, the Federal Circuit  
23 analyzed claims related to “the simultaneous transmission of secure information to a  
24 large group of recipients connected to a decentralized network.” 978 F.3d at 1295–  
25 96. The Federal Circuit concluded that the claims were not directed to an abstract  
26 idea because they were “directed to improving a basic function of a computer data-  
27 distribution network” and “aimed at solving a particular problem of multicasting  
28 computer networks.” *Id.* Similarly, claim 2 of the '759 Patent relates to “simultaneous

1 transmission” of information to multiple recipients. *Id.* It also “solves a particular  
2 problem of multicasting” by allowing communication between end devices  
3 connected in a cable network by channels with different and unknown properties. *Id.*  
4 And, as in *TecSec*, the claimed solution of the ’759 Patent “improv[ed] a basic  
5 function” of the cable network. *Id.* It did so by probing multiple channels of that  
6 network and establishing a common bit loading scheme based on the results,  
7 overcoming the barriers that had prevented “simultaneous transmission” of data in  
8 that network. (*Id.*; ’759 Pat., 6:45–7:4, 10:41–57.)

9 DirecTV contends that the ’759 Patent is directed to the “abstract idea of  
10 analyzing and comparing data and determining a common bit-loading modulation  
11 scheme.” (Mot. at 21.) But, as it did with the ’518 Patent, DirecTV oversimplifies the  
12 claims and ignores the invention’s context. Claim 2 recites a specific set of steps  
13 directed to solving problems specific to communication “in a broadband cable  
14 network,” not analyzing data generally. (’759 Pat., cl 2.) The specification confirms  
15 as much, defining its invention as addressing the “need for a system and method to  
16 connect a variety of CPEs into a local network . . . allowing the utilization of an  
17 existing coaxial cable network.” (*Id.*, 3:63–4:3.) As Entropic’s First Amended  
18 Complaint alleges, prior broadband cable networks did not permit communications  
19 from one user device to multiple other devices simultaneously. (FAC, ¶ 91.) DirecTV  
20 thus disregards the actual problem identified, and solved, by the ’759 Patent.

21 Further, claim 2 is nothing like the claims in the cases cited by DirecTV,  
22 *Electric Power Group* and *Trinity Info Media*. (Mot. at 22.) The claims in those cases  
23 were directed to collecting and analyzing information for display. *Elec. Power Grp.*,  
24 *LLC v. Alstom S.A.*, 830 F.3d 1350, 1355 (Fed. Cir. 2016) (characterizing claims as  
25 “merely selecting information, by content or source, for collection, analysis, and  
26 display”); *Trinity Info Media, LLC v. Covalent, Inc.*, 562 F. Supp. 3d 770, 779 (C.D.  
27 Cal. 2021) (claims for polling users and displaying matching results). There, the  
28 collection and display of data had no effect on the operation of the networks, and

1 computers were used solely as tools. *Elec. Power*, 830 F.3d at 1354; *Trinity*, 562 F.  
2 Supp. 3d at 782. Here, in contrast, claim 2 does not use cable networks as a mere tool  
3 to collect and display data; indeed, it does not display data at all. Rather, it uses a  
4 combination of probing and bit-loading to improve the operation of the network itself  
5 by overcoming the problem of differences in the characteristics of different channels.  
6 Thus, claim 2 recites a “technical solution and improvement” to cable networks and  
7 is not “directed generally to displaying information on a screen.” *Data Engine Techs.*  
8 *LLC v. Google LLC*, 906 F.3d 999, 1008–09, 1011 (Fed. Cir. 2018). It is thus directed  
9 to patent-eligible subject matter under step one of the *Alice* analysis.

10 **b. The ’759 Patent recites unconventional activity in coaxial networks.**

11 Even if claim 2 of the ’759 Patent were (incorrectly) characterized as directed  
12 to an abstract idea, it would still be patent-eligible because it recites multiple  
13 inventive concepts distinct from that abstract idea. *Kollecative*, 50 F.4th at 136.

14 **First**, transmitting probes from one device to multiple devices in a broadband  
15 cable network at all was not routine or conventional. (FAC, ¶¶ 94–95.) This was due,  
16 at least in part, to the “conventional wisdom” at the time that the structure of that  
17 network “prevented devices . . . from communicating with one another.” (*Id.*, ¶¶ 23,  
18 25.) Thus, the transmission of probes in a broadband cable network, particularly to  
19 multiple receivers, was not considered conventional or routine. (*Id.*)

20 **Second**, it was not routine or conventional to broadcast data from one end  
21 device to multiple others over a cable installation, let alone to do so using a bit-  
22 loading scheme that is common to the devices on that network. (*Id.*, ¶¶ 97–98.) For  
23 example, “it was not known in the art” that a common bit loading scheme would be  
24 “generally more efficient” for sending data from one device to multiple devices. (*Id.*;  
25 *see also* Dkt. 168-7 (“’802 Pat.”), 18:48–19:14.)

26 **Third**, the combination of transmitting probes, generating response signals,  
27 and determining a common bit loading scheme was not routine or conventional.  
28 (FAC, ¶¶ 93–97.) This combination recites non-conventional functionality because



1 it allows for “transmit[ing] information from node A to node B and node C  
2 simultaneously” within a cable installation in a home or building, which was not  
3 previously possible, let alone conventional. (’759 Pat., 10:41–11:36, Figs. 10C, 11.)  
4 These elements, in combination, embody inventive concepts that contribute a specific  
5 improvement to the operation of cable installations, and thus claim 2 is patent-eligible  
6 under step two. *Kollecative*, 50 F.4th at 133.

7 DirecTV’s arguments on step two all fail. For one, DirecTV argues that this  
8 Court’s tentative order in the *DISH* case found that the “use of probes alone is  
9 insufficient” to provide an inventive concept. (Mot. at 24 (citing *DISH* Order at 11–  
10 12).) But the Court’s findings in *DISH* relate to different claim limitations of a  
11 different patent regarding different arguments made about different pleadings. Thus,  
12 the findings in *DISH* do not apply to the record here. *See CosmoKey Sols. GmbH &*  
13 *Co. KG. v. Duo Sec. LLC*, 15 F.4th 1091, 1099 (Fed. Cir. 2021) (Reyna, J, concurring)  
14 (patent eligibility “must be decided on a case-by-case basis in light of the particular  
15 claim limitations, patent specification, and invention at issue.”) Indeed, in *DISH*, the  
16 Court found that “Entropic does not plead or argue” that a logical link established by  
17 probing a communication channel (in a different patent) was “in any way  
18 unconventional.” *DISH Order* at 12. Here, however, Entropic **has** both plead and  
19 argued that transmitting probes between end devices in a cable installation was, in  
20 fact, neither routine nor conventional. (FAC, ¶¶ 94–95.) And Entropic plead specific  
21 facts to support this allegation, (*id.*, ¶¶ 22–32), which are supported by statements in  
22 the ’759 Patent about the shortcomings of the prior art, (’759 Pat., 3:22–62).

23 DirecTV also argues that “[e]ach element of representative claim 2 is directed  
24 to a well-known, routine, or conventional function.” (Mot. at 24.) The allegations  
25 described above show that this is incorrect. (FAC, ¶¶ 93–97.) DirecTV argues these  
26 allegations are “conclusory,” (Mot. at 24), but DirecTV is wrong. Entropic alleged in  
27 extensive detail **why** broadcast communication was not performed in prior art  
28 broadband cable installations within a building, and it did so by describing the

1 properties and technical limitations of the splitters those installations used. (FAC,  
2 ¶¶ 22–32.) The ’759 Patent describes the same problems. (’759 Pat., 3:22–4:3.)  
3 Entropic’s allegations, when taken as true as required, show that the combination of  
4 recited functions in the ’759 Patent was unconventional and an improvement on the  
5 prior art. *Kollecative*, 50 F.4th at 133, 135.

6 Because DirecTV cannot reasonably contest that broadcasting data between  
7 end devices in a legacy cable installation was not conventional, it tries a different  
8 tack. DirecTV labels this broadcasting an “abstract idea” and argues that it therefore  
9 cannot supply an inventive concept. (Mot. at 23.) But broadcasting data from one  
10 device to many in a broadband cable network using a common bit-loading scheme is  
11 not abstract. It is a specific capability grounded in a specific networking environment  
12 that had previously impeded such broadcasts, and the steps of claim 2 are directed to  
13 overcoming this specific impediment. (FAC, ¶¶ 93, 97–98.) Further, this “abstract  
14 idea” is not part of DirecTV’s characterization of the abstract idea in its step one  
15 analysis, i.e., “analyzing and comparing data and determining a common bit-loading  
16 modulation scheme.” (Mot. at 21.) DirecTV cannot characterize claim 2 one way for  
17 step one and a different way for step two. *See, e.g., Alice*, 573 U.S. at 221 (step two  
18 looks to whether a claim transforms “the abstract idea” from step one into a patent-  
19 eligible invention).

20 Finally, DirecTV again fails to analyze the claims as an “ordered  
21 combination,” as the law requires. It is not sufficient for DirecTV to argue, as it does,  
22 that “[e]ach element of representative claim 2” is routine or conventional (nor is it  
23 true, as explained above). (Mot. at 24); *see Bascom Glob. Internet Servs., Inc. v.*  
24 *AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016). Even if the individual  
25 elements of claim 2 were routine (which they are not), the ordered combination of  
26 elements is neither routine nor conventional. DirecTV thus “ignore[s] . . . the focus  
27 of the claimed advance in the combination [of elements],” *TecSec*, 978 F.3d at 1296.  
28 Claim 2 of the ’759 Patent recites inventive concepts under step two of the *Alice* test.



1 **VI. THE '539 PATENT RECITES A PATENTABLE IMPROVEMENT IN**  
2 **COAXIAL NETWORK TECHNOLOGY (COUNT VII)**

3 The '539 Patent is patent-eligible because it claims a specific improvement to,  
4 and recites functionality that was not routine or conventional in, cable networks.

5 **a. The '539 Patent is directed to an improvement in modem functionality**  
6 **for communication over a coaxial network, not to an abstract idea.**

7 As set forth above, the Federal Circuit has repeatedly held that improvements  
8 to how networks operate are patentable inventions. *See, e.g., Packet Intel.*, 965 F.3d  
9 at 1309; *Mentone*, 2021 WL 5291802, at \*5–6. Claim 1 of the '539 Patent, like the  
10 '518 and '759 Patents, recites such a patentable improvement.

11 Like the '518 and '759 Patents, the '539 Patent is directed to overcoming  
12 barriers to communication between devices in a coaxial network. The patent explains  
13 that “the existing conventional wisdom is that the use of splitters in the existing  
14 broadband cable networks prevents networking between devices in the network  
15 because signals returning from the devices cannot be routed back through the  
16 splitters, i.e., cannot ‘jump’ a splitter.” ('539 Pat., 3:54–61.) Further, the '539 Patent  
17 explains that variations in channel characteristics were a barrier to creating a “logical  
18 network” that allowed the devices to communicate. (*Id.*, 6:52–58.) If these variations  
19 are not accounted for, a given channel “may be very poorly utilized” and the entire  
20 network would no longer “operate well.” (*Id.*, 6:55–67.)

21 The '539 Patent claims a specific technological solution to this technological  
22 problem. Claim 1 recites a “modem for communication to at least one node across at  
23 least one channel of a coaxial network.” (*Id.*, cl. 1.) The claimed modem also  
24 comprises a “MAC Layer” that uses “at least one probe packet as an echo profile  
25 probe to measure node delay spread.” (*Id.*) As the specification explains, this  
26 measurement can be performed using the “impulse response of the inter-node  
27 channel,” which can indicate channel conditions such as distance between nodes.  
28 (*Id.*, 10:30–31.) Claim 1 then recites that the “measured node delay spread” is used

1 to “optimiz[e] the preamble and cyclic prefix requirements or other parameters.”  
2 (*Id.*, cl. 1, 10:31–32.) The cyclic prefix is a component of a data packet whose length  
3 can be adjusted based on the conditions of the network. (*See id.*, Fig. 20, 14:11–15,  
4 16:4–18.) In particular, the cyclic prefix will have different lengths based on the  
5 “multi-path delay spread in the network.” (*Id.*, 14:11–15.) This cyclic prefix is used  
6 to “accommodate echo and multipath,” which are specific types of undesirable  
7 interference that can vary based on the “distance between nodes.” (Ex. 3, Provisional  
8 Appl. No. 60/632,797, ¶ 54.<sup>4</sup>) Thus, claim 1 recites a solution to the problem of  
9 variable and unknown distances in a coaxial network by probing those distances and  
10 optimizing the construction of data packets in response.

11 Claim 1 of the ’539 Patent is similar to other claims the Federal Circuit has  
12 held to be patent-eligible. For example, in *Koninklijke KPN N.V. v. Gemalto M2M*  
13 *GmbH*, the Federal Circuit held a claim to be patent-eligible that “employ[ed] a new  
14 way of generating check data that enables the detection of persistent systematic errors  
15 in data transmissions that prior art systems were previously not equipped to detect.”  
16 942 F.3d 1143, 1151 (Fed. Cir. 2019). The claims were patentable because they  
17 recited a “specific means or method that solves a problem in an existing technological  
18 process.” *Id.* at 1150. Likewise, claim 1 recites a specific means to solve a specific  
19 problem: the variation in channel characteristics in existing coaxial networks that had  
20 impeded communication. The claimed solution employs a specific probing and  
21 optimization technique that enables communication that prior networks were  
22 “previously not equipped” to achieve. *Id.* at 1151; (’539 Pat., 3:54–61). Similarly, as  
23 with other claims the Federal Circuit has found to be patentable, claim 1 of the ’539  
24 Patent recites a “sufficiently specific implementation”—optimizing parameters of  
25 network packets (“preamble and cyclic prefix”) using a specific technique (an “echo  
26

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27  
28 <sup>4</sup> This provisional application is incorporated by reference in the ’539 Patent and is  
thus considered part of the specification of that patent. (’539 Pat., 1:5–19.)

1 profile probe”) to “improve[] the functioning of the overall technological process”  
2 (communication over a coaxial network). *Koninklijke*, 942 F.3d at 1151.

3 DirecTV again argues, as it did for the ’518 and ’759 Patents, that the ’539  
4 Patent is directed to the abstract idea of “transmitting information and analyzing and  
5 measuring and adjusting parameters.” (Mot. at 33.) And again, as it did for the ’518  
6 and ’759 Patents, DirecTV ignores the coaxial networking environment that defines  
7 the invention. The ’539 Patent is not about transmitting or analyzing data in the  
8 abstract. It is directed to improvements in the functionality of specific hardware  
9 (a modem) for a specific type of communication: “communication to at least one  
10 node across at least one channel of a coaxial network.” (’539 Pat., cl. 1.) It achieves  
11 this improvement by sending a specific probe type (echo profile) to measure a  
12 specific network characteristic (node delay spread) to optimize specific parameters  
13 (cyclic prefix). These functions had not been performed in coaxial networks before,  
14 (FAC, ¶¶ 130–134), and improved how the networks operated.

15 DirecTV also argues, as it did for the ’518 and ’759 Patents, that the claimed  
16 invention is analogous to the claims held invalid in *Elec. Power*. (Mot. at 33.) And, as  
17 it did for the ’518 and ’759 Patents, DirecTV misunderstands the invention. The ’539  
18 Patent does not use computers as tools to transmit and analyze data for display, as  
19 was the case in *Electric Power*. 830 F.3d at 1353–54. Nor does it use computers as  
20 tools to gather and analyze pricing data, as was the case in *OIP Techs., Inc. v.*  
21 *Amazon.com, Inc.*, 788 F.3d 1359, 1361–62 (Fed. Cir. 2015). Rather, the claim recites  
22 sending a specific probe to optimize specific parameters to overcome a specific  
23 problem on specific networks: variation in channel characteristics that had made it  
24 difficult to establish a logical network over coaxial installations. Thus, claim 1 is  
25 distinguishable from claims that use networks or computers as a mere tool to display  
26 or analyze data. *See Data Engine Techs.*, 906 F.3d at 1011.

27 **b. The ’539 Patent recites unconventional activity in coaxial networks.**

28 Even if claim 1 of the ’539 Patent were directed to an abstract idea (which it is

1 not), it would still recite patent-eligible subject matter. The claimed invention of the  
2 '539 Patent recites multiple inventive concepts that differ from and improve upon the  
3 prior art, as shown by Entropic's First Amended Complaint and the '539 Patent itself.

4 **First**, claim 1 recites the inventive concept of transmitting probes to measure  
5 delay spread in a coaxial network. As recited in Entropic's First Amended Complaint,  
6 it was not routine or conventional to transmit probe packets or to measure delay over  
7 such a network. (FAC, ¶¶ 131–134.) This is because, among other reasons, modems  
8 on a conventional coaxial network “did not communicate with one another” at the  
9 time of the '539 Patent. (*Id.*, ¶ 127.) They thus had no reason to measure delay for  
10 transmissions between them or optimize communication based on that measurement.  
11 (*Id.*, ¶¶ 128–130.) These factual allegations are consistent with the '539 Patent, must  
12 be taken as true, and are sufficient to identify an inventive concept in the  
13 improvement of coaxial networking. *Kollecative*, 50 F.4th at 136.

14 In its Motion, DirecTV argues that the inability for devices to communicate  
15 over prior art coaxial networks is irrelevant because the '539 Patent does not “require  
16 communication between nodes.” (Mot. at 35.) But that is precisely what is claimed.  
17 Claim 1 requires that a “transmitter communicate” a packet containing an echo  
18 profile probe to “at least one node across at least one channel of a coaxial network.”  
19 ('539 Pat., cl. 1.) Thus, the claim specifically requires “communication between  
20 nodes,” which was not routine or conventional at the time. (FAC, ¶¶ 22–32.)

21 DirecTV also argues that the claims and specification fail to explain how the  
22 invention is implemented. (Mot. at 35–36.) Not so. Claim 1 specifies the type of  
23 probe sent (echo profile probe) and what it measures (node delay spread). The  
24 specification then explains how the probe operates (measuring “impulse response”  
25 of a channel) and how this measurement affects transmissions (determining the  
26 length of a cyclic prefix) in a BCN. ('539 Pat., 10:30–37, 14:11–16.) The '539 Patent  
27 also explains that the echo profile probe is used to “determine how far apart the BCN  
28 modems (i.e. nodes) are in the BCN network” and that “the determined distance

1 between nodes is used to calculate the cyclic prefix that is used in messages to  
2 accommodate echo and multipath.” (Ex. 3, Provisional Appl. No. 60/632,797, ¶ 54.)  
3 These disclosures state how the claimed invention works and how it helps solve the  
4 problem of variable channel characteristics in a broadband cable network.

5 **Second**, claim 1 also contains an inventive concept in the ordered combination  
6 of (1) transmitting probes from one end device to another in a coaxial installation;  
7 (2) measuring node delay spread; and (3) optimizing packet construction based on  
8 the measured spread. This combination was not routine and conventional.  
9 (*Id.*, ¶¶ 130, 133–134.) And it achieves a technical improvement by enabling  
10 communication that “conventional wisdom” believed could not be done. (’539 Pat.,  
11 3:54–61.)

12 Instead of addressing the claimed combination of elements, DirecTV argues  
13 that the ’539 Patent recites “generic equipment [that] is used for generic,  
14 conventional functions.” (Mot. at 34.) This argument “misses the point” because  
15 “useful improvements to [coaxial] networks are patentable regardless of whether the  
16 network is comprised of standard computing equipment,” *Kollecive*, 50 F.4th at 135.  
17 As the Federal Circuit has explained, a “claimed invention’s compatibility with  
18 conventional [cable] communication systems does not render it abstract,” *Uniloc*,  
19 957 F.3d at 1309. Further, the ’539 Patent does not recite “generic equipment.” It  
20 recites a modem for communicating over a specific type of network (coaxial) that is  
21 programmed at a specific layer (MAC Layer) to perform specific functions  
22 (transmitting echo profile probes and optimizing cyclic prefix for data packet  
23 construction). (’539 Pat., cl. 1.) And, as the Federal Circuit has found, it is not  
24 material that the improvement defined by the ’539 Patent is implemented at a specific  
25 layer of software architecture (MAC Layer), rather than “by reference to ‘physical’  
26 components.” *Uniloc*, 957 F.3d at 1309.

27 Because DirecTV cannot dispute that transmitting probes to measure node  
28 delay and optimizing packet construction in response was unconventional in a coaxial

1 installation, DirecTV instead argues that “limiting the invention to a particular  
2 technological environment (i.e., coaxial networks) does not render the claims any  
3 less abstract.” (Mot. at 36.) Again, this argument fails to appreciate the critical  
4 importance of the coaxial context. Coaxial cabling is not a “field of use” limitation;  
5 it is the basis for the specific technical problem that the ’539 Patent solves. (’539 Pat.,  
6 3:38–61.) The invention of the ’539 Patent recites a specific solution to a problem  
7 specific to coaxial installations by measuring the node delay spread and using it to  
8 optimize packet construction. Claim 1 thus “uses an environment—[coaxial cable  
9 networks]—to do significantly more than simply carry out an abstract idea” and is  
10 thus patent-eligible. *Cellspin Soft, Inc. v. Fitbit, Inc.*, 927 F.3d 1306, 1319 (Fed. Cir.  
11 2019) (rejecting argument that claimed improvements in use of Bluetooth were field  
12 of use limitations).

13 **VII. THE ’802 PATENT RECITES A PATENT-ELIGIBLE**  
14 **IMPROVEMENT IN COAXIAL CABLE NETWORKS (COUNT IV)**

15 The ’802 Patent is patent-eligible because it claims a specific improvement to,  
16 and recites functionality that was not routine or conventional in, coaxial networks.

17 **a. The ’802 Patent claims a patentable improvement to constructing data**  
18 **packets used to enable communication in a coaxial cable network.**

19 As set forth above, and as described in the ’802 Patent and in Entropic’s First  
20 Amended Complaint, legacy coaxial cable installations posed major technological  
21 obstacles to communication between end devices in a building. One such problem  
22 was “coordinating network resources . . . and optimizing communications between  
23 CPEs” in the “difficult” broadband cable network environment. (’802 Pat., 3:60–4:3.)  
24 The problem arose with the initial connection of a device, as there was no well-known  
25 mechanism for devices to locate one another or become aware of each other’s  
26 existence. (FAC, ¶ 108.) For instance, there was no “discovery” or “admission”  
27 process that allowed for the admission of a new device to an in-home cable network,  
28 much less for user devices to admit one another. (*Id.*, ¶¶ 26, 103.)



1 The '802 Patent claims a specific technological solution to this problem.  
2 In particular, claim 3 recites transmitting packets from a “Broadband Cable Network  
3 (BCN) modem” to a plurality of nodes in a broadband cable network, including a  
4 “beacon packet” that is formatted with specific data fields. ('802 Pat., cl. 3.) The  
5 claimed beacon packet is a type of “robust packet” used to broadcast important  
6 control and timing information to all nodes on the network. (*Id.*, 9:40–44.) Such  
7 beacon packets are particularly adapted to solve the technological challenges in cable  
8 installations because they “are very robust and can be received even in a very poor  
9 channel environment.” (*Id.*, 13:15–17.) The '802 Patent further explains that “[w]hen  
10 a BCN modem is activated, it attempts to locate the network timing by receiving a  
11 beacon packet [] which identifies network timing and essential network control  
12 information.” (*Id.*, 25:14–21.) This “essential network control information” is  
13 claimed in the beacon packet data fields of claim 3. Claim 3 is thus directed to a  
14 patentable improvement that solves technological problems in the art.

15 Federal Circuit precedent confirms that claim 3 is patentable. In *Uniloc*, the  
16 Federal Circuit held that claims which recited the inclusion of “an additional data  
17 field” to an “inquiry message prior to transmission” were patent-eligible because they  
18 were directed to an “improvement to computer functionality.” The Federal Circuit  
19 reasoned that the “additional data field enables a primary station to simultaneously  
20 send inquiry messages and poll parked secondary stations,” which “eliminates or  
21 reduces the delay present in conventional systems where the primary station  
22 alternates between polling and sending inquiry messages.” 957 F.3d at 1307–08.  
23 Similarly, claim 3 of the '802 Patent includes specific fields in a particular packet  
24 type to overcome technological problems that had prevented the admission of new  
25 nodes to a broadband cable network. ('802 Pat., 3:54–4:3.) These specific fields, like  
26 the “additional data field” in *Uniloc*, provide an improvement in how a  
27 communication network operates. (*Id.*, cl. 3); 957 F.3d at 1307–08.

28 ///

1 In its Motion, DirecTV contends that the '802 Patent is directed to the “abstract  
2 idea of transmitting messages containing the claimed fields of information.” (Mot. at  
3 39.) DirecTV again disregards context of the patent. The '802 Patent is not just about  
4 transmitting messages, or even “transmitting information in a coaxial cable  
5 environment.” (*Id.* at 41.) It is about transmitting specific information (admission-  
6 related information such as “network coordinator ID field” and “admission window”)  
7 in a specific packet type (a “robust” beacon packet) in a specific environment  
8 (broadband cable networks) to overcome problems with poor or unknown channel  
9 conditions. (FAC, ¶¶ 100–106.) Thus, the '802 Patent claims a type of invention that  
10 the Federal Circuit has held to be patentable: improving the performance of a network  
11 by adding particular data fields to a message that provide a technological benefit. *See*  
12 *Uniloc*, 957 F.3d at 1307–08 (The “additional data field” enabled “[t]he claimed  
13 invention” to “eliminate[] or reduce[] the delay present in conventional systems.”).

14 Next, DirecTV argues that requiring the packets to include specific  
15 information does not make the claim patent-eligible. (Mot. at 39.) DirecTV is wrong  
16 because the specific data fields in claim 3 solve problems with node-to-node  
17 communications. Further, DirecTV’s cited cases are inapposite. (Mot. at 40 (citing  
18 *Chamberlain Grp., Inc. v. Techtronic Indus. Co.*, 935 F.3d 1341 (Fed. Cir. 2019) and  
19 *Bridge & Post, Inc. v. Verizon Comm’cns, Inc.*, 778 F. App’x 882 (Fed. Cir. 2019)).)  
20 The claims in those cases were directed to communicating information to achieve a  
21 purpose other than improving a network, namely alerting a user about the status of a  
22 garage door or tracking users to serve advertisements. Here, claim 3 is not  
23 transmitting “network status information” for some non-networking purpose. (*Id.*)  
24 Instead, the specific data fields of the claimed packet types enable nodes to locate  
25 and communicate with each other in unpredictable and unreliable conditions,  
26 whereas previously they could not communicate at all. (*See* '802 Pat., 25:13–21, 36–  
27 47.) Thus, claim 3 is “directed to a specific asserted improvement to the functionality  
28 of the communication system itself.” *See Uniloc*, 957 F.3d at 1309.



1 DirecTV's Motion also ignores the factual allegations in Entropic's First  
2 Amended Complaint. For instance, Entropic plead that the legacy coaxial  
3 environment "made locating nodes on the network difficult and impractical" and that  
4 "devices in a conventional broadband cable network at the time did not communicate  
5 with one another and thus did not identify the source, destination, or network  
6 coordinator." (FAC, ¶¶ 108, 105.) These allegations confirm the technological  
7 problems in the art and that claim 3 is directed to overcoming them using specific  
8 packet types with particular fields that allow devices to locate and identify one  
9 another. Entropic's allegations must be presumed to be true at this stage, (*Usher*, 828  
10 F.2d at 561), and further establish that claim 3 of the '802 Patent is directed to solving  
11 a technological problem.

12 DirecTV's other arguments also fail. For instance, DirecTV suggests that the  
13 claims here "merely invoke[] generic processes and machinery," like the claims in  
14 *Two-Way Media*. (Mot. at 40 (citation omitted).) This argument disregards the  
15 technological environment of the claims. As the Federal Circuit noted in *Uniloc*, the  
16 claims held ineligible in *Two-Way Media* failed to "concretely capture any  
17 improvement in computer functionality." *Uniloc*, 957 F.3d at 1308. Not so here. First,  
18 as discussed above, the '802 Patent claims facilitate node-to-node communication on  
19 a network architecture that previously prevented it. Second, DirecTV  
20 mischaracterizes the technological environment of the '802 Patent. It does not  
21 involve just any "coaxial cable installation," but the implementation of a "peer-to-  
22 peer mesh network" over existing coaxial cable. ('802 Pat., 3:30–34, 6:66–7:3.) The  
23 solution recited in claim 3 solves a technological problem arising in a specific type  
24 of network, and is thus directed to patent-eligible subject matter under *Alice* step one.

25 **b. The '802 Patent recites unconventional activity in coaxial networks.**

26 Even if claim 3 of the '802 Patent was (incorrectly) characterized as directed  
27 to an abstract idea, it would nevertheless be patent-eligible because it recites multiple  
28 inventive concepts that were neither routine nor conventional in the art.

1       **First**, upconverting and transmitting packets from a BCN modem to multiple  
2 node devices in a broadband cable network was not routine or conventional. (FAC,  
3 ¶¶ 101, 103–106, 111.) Because it was the “conventional wisdom” at the time that  
4 the structure of cable installations “prevented devices . . . from communicating with  
5 one another,” the transmission of packets between end devices was unconventional,  
6 particularly to multiple receiving nodes. (*Id.*, ¶¶ 23, ¶ 25.) Further, because the  
7 communications enabled by the patent are implemented on existing coaxial cabling  
8 that was traditionally installed to carry television signals, claim 3 requires  
9 upconverting the packets for transmission, which can be done to avoid interference  
10 with frequencies typically used by those television signals. (*Id.*, ¶ 111; ’802 Pat.,  
11 Fig. 6, 15:64–16:2.) This too was an unconventional step.

12       **Second**, formatting a beacon packet with the specific data fields recited in  
13 claim 3 was not routine or conventional for a modem in a broadband cable network.  
14 (*Id.*, ¶ 112.) As the specification explains, there were needs in the art for  
15 “coordinating network resources, access to the network, and to optimize the  
16 communication between CPEs” (customer premises equipment). (’802 Pat., 4:1–3.)  
17 With the claimed invention, a BCN modem “attempts to locate the network timing  
18 by receiving a beacon packet [] which identifies network timing and essential  
19 network control information.” (*Id.*, 25:14–21.) Thus, the beacon packet facilitates  
20 “access to the network,” addressing a need in the art. (*Id.*, 4:1–3; FAC, ¶ 102.)  
21 Because this beacon packet element provides access to a broadband cable network  
22 that was not previously available, it was not routine and conventional.

23       **Third**, the combination of transmitting, upconverting, and formatting a beacon  
24 packet with the claimed data fields was not routine or conventional in the field of  
25 coaxial networks. This combination recites functionality that is different from, and  
26 improves upon, existing coaxial installations because it enables “a peer-to-peer mesh  
27 network, such that every BCN modem enabled device can communicate directly with  
28 any other BCN modem enabled device on the network.” (’802 Pat., 7:1–3.)

1 These elements, alone and in combination, embody inventive concepts that  
2 contribute a specific improvement to the operation of broadband cable networks, and  
3 thus claim 3 is patent-eligible under step two. *Kollecative*, 50 F.4th at 133 (reversing  
4 holding of invalidity under § 101 because the claim elements were alleged to  
5 “improve the performance of the content delivery network”).

6 DirecTV’s arguments on step two are unavailing. DirecTV asserts that the  
7 specification “makes clear that beacon packets and control and data packets were  
8 well-known.” (Mot. at 41 (citing ’802 Pat., 9:31–36, 9:44–49, 9:52–54, 10:7–12).)  
9 DirecTV gets it backwards. The cited parts of the specification describe packet types  
10 that are “prevalent” in the *invention*, not what is known in the prior art. (See ’802  
11 Pat., 9:31–34 (describing packet types used in the invention to “enable efficient data  
12 transmission in the network”).) The claimed packet types were “developed by the  
13 inventors” and thus “are not admitted prior art.” *CosmoKey*, 15 F.4th at 1098.

14 Furthermore, DirecTV’s argument that the claimed “modem subsystem,”  
15 “MAC subsystem,” and “RF subsystem” are generic components ignores the Federal  
16 Circuit’s guidance that “useful improvements to [coaxial] networks are patentable  
17 regardless of whether the network is comprised of standard computing equipment.”  
18 *Kollecative*, 50 F.4th at 135. The ’802 Patent invented an improvement to networking  
19 technology by including specific data fields in specific packet types to overcome  
20 specific problems in coaxial networks of the prior art. The ’802 Patent recites a  
21 patentable inventive concept under step two of the *Alice* analysis, and DirecTV’s  
22 Motion to Dismiss Count IV should be denied.

23 **VIII. THE ’681 PATENT CLAIMS A PATENT-ELIGIBLE IMPROVEMENT**  
24 **TO NETWORK EFFICIENCY (COUNT XII)**

25 The claimed invention of the ’681 Patent is directed to technical improvements  
26 in clock synchronization, a key aspect of communications between devices operating  
27 in a network such as a mesh network implemented on conventional coaxial cabling.  
28 Because the ’681 Patent claims a specific improvement to network efficiency and

1 recites functionality that was not routine or conventional in coaxial networks, the  
2 '681 Patent is patentable under 35 U.S.C. § 101.

3 **a. The '681 Patent claims a patentable improvement to packet**  
4 **transmission in a broadband coaxial network.**

5 Entropic's earlier patents, described above, "revolutionized the delivery of  
6 highspeed data networking services to customers on existing home coaxial  
7 infrastructure." (FAC, ¶ 135; Dkt. 168-23 ("'681 Pat."), 1:59–2:3.) But a need then  
8 arose for faster, more reliable data connections across such networks to support  
9 applications such as transmitting high-quality video. (FAC, ¶ 136.) A challenge to  
10 achieving this goal was "managing multiple communications from various devices  
11 across a limited channel." ('681 Pat., 2:5–7; FAC, ¶ 138.) One way to address this  
12 challenge was to use a dedicated network coordinator node (NC) to "schedule all  
13 traffic on the network." ('681 Pat., 2:37–39, cl. 6; FAC, ¶ 142.) To facilitate the  
14 scheduling, "the NC and each node in the network maintains a local channel time  
15 clock (CTC) counter and all nodes are responsible for synchronizing their CTC  
16 counts to that of the NC." ('681 Pat., 2:44–47.) But the scheduling was challenging  
17 due to differences in channel characteristics and properties of the splitters used.  
18 (FAC, ¶¶ 22–32.) In particular, "inaccuracies to the CTC [] can be introduced by  
19 several factors," resulting in an increase in the amount of time between network  
20 packets ("inter-frame gap (IFG)") and decreasing efficiency. (*Id.*, 3:1–2, 19–22.)

21 The '681 Patent provides a specific technological solution to this problem.  
22 (FAC, ¶ 190.) Specifically, claim 1 recites an improvement in clock synchronization  
23 that accounts for the actual delay experienced by transmissions between nodes in the  
24 network. (FAC, ¶ 191; '681 Pat., 3:54–60.) As pled in Entropic's First Amended  
25 Complaint, the solution is directed to "logical point-to-point networks, such as  
26 coaxial networks using MoCA technology, that require an estimate of propagation  
27 delay in a multipath environment where the propagation delay between two nodes is  
28 not known in advance, can vary dynamically based on changes in the channel path

1 characteristics between them, and where the delay between two nodes in one  
2 direction can differ from the delay in the opposite direction.” (FAC, ¶ 191.) The  
3 claimed invention leverages a technological solution—the “ranging” techniques  
4 recited in claim 1—to “reduce[] [IFG] by more accurately controlling the expected  
5 started and end times for arriving network packets.” (’681 Pat., 3:61–63.) Thus,  
6 viewed as a whole and in the context of the specification, claim 1 is directed to a  
7 patentable improvement in broadband coaxial networks. (FAC, ¶ 195.)

8 The *Uniloc* case confirms that claim 1 is patentable. In *Uniloc*, the claimed  
9 invention sought to solve a problem with latency that arose in “conventional systems,  
10 such as Bluetooth networks.” 957 F.3d at 1305. The problem in the art was that the  
11 device managing the network had to send inquiry messages and polling messages  
12 separately, which resulted in extensive delays. *Id.* To solve this problem, the claim  
13 recited the use of “an additional data field” within an “inquiry message prior to  
14 transmission,” which allowed the device managing the network “to simultaneously  
15 send inquiry messages and poll parked secondary stations.” *Id.* at 1307–08. Although  
16 the claims applied generally to a “communication system,” the Federal Circuit held  
17 them to be patent-eligible because they were directed to an “improvement to  
18 computer functionality, namely the reduction of latency experienced by parked  
19 secondary stations in communication systems.” *Id.* at 1307.

20 Claim 1 of the ’681 Patent is similarly directed to a patent-eligible  
21 improvement. Like the claims in *Uniloc*, the claimed invention here is addressed to  
22 a problem in the field of network management: delays and uncertainty introduced by  
23 the properties of a network, such as “delay in transmission” and “propagation delay.”  
24 (’681 Pat., 3:1–14.) Just as the claims in *Uniloc* reduced latency in a network by  
25 adding a specific data field (“an additional data field for polling”), claim 1 reduces  
26 delays by adding specific data types (a “first packet clock time set to the local clock  
27 time of the first node at transmission time” and a “scheduled arrival clock time”).  
28 (*Id.*, cl. 1.) And just as the added polling field in *Uniloc* solved a specific problem

1 with delayed response times in conventional communication systems, *Uniloc*, 957  
2 F.3d at 1307–08, the added clock data types in claim 1 solved specific problems with  
3 unknown and unpredictable response times in networks such as MoCA networks.  
4 (’681 Pat., 2:60–3:65.) As in *Uniloc*, claim 1 of the ’681 Patent is directed to an  
5 improvement in computer functionality with respect to reducing latency in a  
6 communication system, and it is thus eligible. 957 F.3d at 1307.

7 In its Motion, DirecTV contends that the ’681 Patent is directed simply to  
8 “synchronizing local clock times.” (Mot. at 15.) DirecTV is wrong. **First**, claim 1 is  
9 not, as DirecTV asserts, directed to an “improved time synchronization” and not an  
10 “improved communications network.” (Mot. at 16.) When analyzing a claim for  
11 eligibility, the claim must be considered “as a whole . . . in light of the specification.”  
12 *Packet Intel.*, 965 F.3d at 1309 (internal citations omitted). Here, the specification  
13 explicitly links the claimed ranging techniques to an improved communications  
14 network: ranging “improve[s] network efficiency,” “can result in reduced inter-frame  
15 gap (IFG),” and “provides more predictable network packet arrival times.” (See ’681  
16 Pat., 2:4–7, 3:54–65.) Thus, claim 1 of the ’681 Patent is directed to an improved  
17 communications network, not to synchronization for its own sake.

18 **Second**, DirecTV ignores the factual allegations in Entropic’s First Amended  
19 Complaint. Entropic’s pleading shows that, prior to the ’681 Patent, there were  
20 several technological problems with communication over conventional coaxial  
21 networks: “the propagation delay between two nodes is not known in advance, can  
22 vary dynamically based on changes in the channel path characteristics between them,  
23 and [] the delay between two nodes in one direction can differ from the delay in the  
24 opposite direction.” (FAC, ¶ 191.) These allegations are consistent with the  
25 disclosures of the ’681 Patent, (e.g., ’681 Pat., 2:4–13, 2:60–3:14), and must be  
26 presumed to be true, *Usher*, 828 F.2d at 561. When viewed in the context of  
27 Entropic’s well-plead allegations, claim 1 of the ’681 Patent is directed to  
28 overcoming problems with delay, latency, and unpredictability in conventional



1 networks through use of specific timing and ranging techniques. Claim 1 of the '681  
2 Patent is thus directed to solving a technological problem, not an abstract idea.

3 **Third**, DirecTV's cited cases are inapposite. (Mot. at 15.) In *SAP*, claims  
4 relating to statistical analysis of financial data were found to be abstract because the  
5 "focus of the claims is not any improved computer or network, but the improved  
6 mathematical analysis." *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1168 (Fed.  
7 Cir. 2018). By contrast, claim 1 is focused on "ranging" and "adjusting" functions  
8 that are directed to an "improved computer or network," rather than use of computers  
9 as mere tools. *Id. Implicit, LLC* is similarly distinguishable. There, a claim relating  
10 to "synchronizing data between computer directories" did not "provide any  
11 additional detail with respect to how the computer systems performs the computer  
12 method" and "does not teach an improvement in computer functionality." *Implicit,*  
13 *LLC v. Ziff Davis, Inc.*, No. 2:22-CV-09453-AB-AFMx, 2023 WL 4366351, at \*3  
14 (C.D. Cal. July 3, 2023). By contrast, the '681 Patent claims a specific series of  
15 timing and ranging functions, and it explains how these functions improve the  
16 operation of networks, like MoCA networks, by reducing the uncertainties  
17 surrounding delay and clock times and providing "more predictable network packet  
18 arrival times." ('681 Pat., 3:1–14, 54–65.)

19 **Fourth**, DirecTV is wrong that the claims of the '681 Patent preempt "[t]rains,  
20 postal, or telegraph systems" because those systems can be considered  
21 "communication networks" with "nodes." (Mot. at 17.) Claim 1 of the '681 Patent  
22 "is limited to a specific process for [synchronizing nodes] and does not preempt  
23 approaches that use . . . different techniques," *McRO*, 837 F.3d at 1316. DirecTV  
24 does not and cannot argue, for instance, that the method of claim 1 is the only way to  
25 synchronize nodes. Rather, claim 1 recites a specific way to synchronize nodes using  
26 specified data such as "a first packet clock time" and a "scheduled arrival clock time,"  
27 as well as use of a ranging method to calculate propagation delay. ('681 Pat., cl.1.)  
28 DirecTV's argument is also premature, if not entirely incorrect, because it assumes

1 that “nodes” could refer to train stations and that “packets” could refer to pieces of  
2 paper—assumptions that contradict the patent’s focus on computer networking.  
3 (’681 Pat., 1:15–3:50.) These arguments are inappropriate at the pleading stage.  
4 *See, e.g., Fortinet, Inc. v. Fore Scout Techs., Inc.*, No. 20-CV-03343-EMC, 2020 WL  
5 6415321, at \*10 (N.D. Cal. Nov. 2, 2020) (denying motion to dismiss because “claim  
6 construction and development of facts . . . may inform the § 101 analysis”).

7 ***Lastly***, DirecTV is wrong to assert that “[t]he dependent claims do not add  
8 limitations that alter the ineligibility analysis.” (Mot. at 14.) For example, claims 6,  
9 9, and 10 add requirements that tie the invention to a particular type of network: one  
10 that uses a “network coordinator” (claim 6), or a mesh network (claim 9), or a MoCA  
11 network (claim 10). (’681 Pat.) At minimum, these claims “alter” DirecTV’s analysis  
12 because they do not present the “preemption” issue cited in its Motion and contradict  
13 DirecTV’s assertion that “the ’681 Patent is directed to any communication  
14 network.” (Mot. at 19.) Further, these claims are separately patentable because they  
15 even more explicitly link the claimed invention to the specific technological problem  
16 described in the specification, i.e., delays in a MoCA network. (*Id.*, 1:59–3:49.)

17 **b. The ’681 Patent recites unconventional clock synchronization steps.**

18 Even if claim 1 of the ’681 Patent were (incorrectly) characterized as directed  
19 to an abstract idea, it would still be patent-eligible because it recites inventive  
20 concepts that were neither routine nor conventional in the art.

21 ***First***, “perform[ing] a ranging method between the first and second nodes  
22 based on the local clock time exchanged” to obtain “an estimated propagation delay  
23 between the first and second node” was not routine or conventional. (FAC, ¶ 193.)  
24 At the time of the invention of the ’681 Patent, the existing MoCA standard attempted  
25 to synchronize nodes to that of a network coordinator, but could not fully account for  
26 delays and ambiguities in that process. (’681 Pat., 2:44–47.) The use of a “ranging  
27 method,” which measured or estimated the actual propagation delays to and from  
28 other nodes in the network, (*id.*, 3:58–60), was different from, and improved upon,



1 existing MoCA networks. It is this unconventional ranging method that allowed the  
2 claimed invention to improve on the art by calculating estimated propagation delays  
3 in a “multipath environment where the propagation delay between two nodes is not  
4 known in advance, can vary dynamically based on changes in the channel path  
5 characteristics between them, and where the delay between two nodes in one  
6 direction can differ from the delay in the opposite direction.” (FAC, ¶ 191.)

7 **Second**, adjusting the local clock time of a node based on the estimated  
8 propagation delay was not routine or conventional. (*Id.*, ¶ 194.) As explained above,  
9 unpredictability in networks such as broadband coaxial networks required new ways  
10 to calculate propagation delay between nodes to improve network efficiency. (’681  
11 Pat., 2:60–3:49.) Just as use of a ranging method based on estimates of propagation  
12 delay was not routine or conventional, so too was it neither routine nor conventional  
13 to adjust local time clocks based on the results of such ranging. (*Id.*, ¶ 194.)

14 **Third**, the combination of exchanging local clock times, using ranging to  
15 estimate a propagation delay, and adjusting local time clocks based on the estimated  
16 delay was not routine or conventional. This combination recites functionality that is  
17 different from, and improves upon, existing broadband coaxial networks because it  
18 “improve[s] network efficiency” and enables “more predictable network packet  
19 arrival times.” (’681 Pat., 3:54–65; FAC, ¶ 195.) This combination is not a mere  
20 directive to “synchronize nodes.” Rather, it is a collection of specific timing and  
21 ranging functions that together improve the efficiency and capabilities of  
22 communication networks with unpredictable channels, such as broadband coaxial  
23 networks. Thus, claim 1 is patent-eligible under step two. *Kollecative*, 50 F.4th at 133.

24 DirecTV’s Motion argues that the claims of the ’681 Patent “rely on generic  
25 computer equipment to perform the claimed abstract idea of clock synchronization.”  
26 (Mot. at 18.) Again, DirecTV misses the point: “useful improvements to [MoCA]  
27 networks are patentable regardless of whether the network is comprised of standard  
28 computing equipment.” *Kollecative*, 50 F.4th at 135. Nor is it a requirement that the

1 improvement over the prior art be “defined by reference to ‘physical’ components,”  
2 as opposed to an improvement in how conventional networks operated. *Uniloc*, 957  
3 F.3d at 1309. The ’681 Patent thus recites a patentable inventive concept under *Alice*  
4 step two.

5 **IX. JOINDER IN THE COX MOTION IS INAPPROPRIATE**

6 At the end of its Motion, DirecTV requests to join motions filed by DISH and  
7 Cox in related cases. (Mot. at 43.) Entropic does not oppose DirecTV’s request to  
8 join the *DISH* motion and related briefing as to the patents addressed there, on the  
9 condition that on appeal DirecTV would be bound by the arguments raised by DISH.<sup>5</sup>  
10 However, as argued throughout this brief, the findings in the Court’s Order in the  
11 *DISH* case are not applicable to the five patents challenged in DirecTV’s Motion.  
12 This is because this case involves different factual allegations, different patents,  
13 different claim limitations, and different arguments. *See CosmoKey*, 15 F.4th at 1099  
14 (Reyna, J, concurring).

15 With respect to the motion filed in *Cox*, Entropic opposes DirecTV’s request  
16 for joinder because Cox and DirecTV are not “so similarly situated that filing an  
17 independent motion would be redundant.” *Tatung Co., Ltd. v. Shu Tze Hsu*, 217 F.  
18 Supp. 3d 1138, 1151 (C.D. Cal. 2016). In this case, Entropic has plead facts regarding  
19 the technical limitations of coaxial networks in the prior art, (FAC, ¶¶ 22–32), and  
20 regarding the technological improvements recited by the two patents challenged in  
21 the Cox motion, (*id.*, ¶¶ 147–180). These allegations are not part of the pleadings in  
22 the Cox case, and thus the record before the Court is different. Thus, joinder is not  
23 appropriate because DirecTV is not “similarly situated” to Cox.

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26 ///

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27 <sup>5</sup> Dish argues that this Court “issued final judgment in the DISH case.” (Mot. at 43.)  
28 This is incorrect. The Court issued an Order, but has not entered final judgment.

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**CERTIFICATE OF COMPLIANCE**

The undersigned, counsel of record for Plaintiff Entropic Communications, LLC, certifies that this brief contains 35 pages of substantive argument, which complies with the page limit set by court order dated September 20, 2023.

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Respectfully submitted,

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